



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,611	04/15/2002	Michael Cole	602-1558	8335
23644	7590	04/04/2006	EXAMINER	
BARNES & THORNBURG, LLP			NAGPAUL, JYOTI	
P.O. BOX 2786			ART UNIT	
CHICAGO, IL 60690-2786			PAPER NUMBER	
			1743	
DATE MAILED: 04/04/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

5

Office Action Summary	Application No. 10/030,611	Applicant(s) COLE, MICHAEL	
	Examiner Jyoti Nagpaul	Art Unit 1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 12, 13 and 16-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12-13, and 16-18 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Amendment filed on January 30, 2006 has been acknowledged. Claims 1-8,12-13 and 16-18 are pending.

Response to Amendment

Rejection of Claims 1-5 and 16-18 as being anticipated by Kimura (US 5167926) has been maintained in light of arguments.

Rejection of Claims 12-13 as being anticipated by Brierton (US 5356365) has been maintained in light of applicant's arguments.

Rejection of Claim 6 as being unpatentable over Kimura in view of Sheeran (US 4832678) been maintained in light of applicant's arguments.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-5 and 16-18** are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura (US 5167926).

Kimura teaches sample holders (56, 58, and 60) that are formed from a material having high thermal conductivity and are adapted to receive containers (62) each containing a sample to be evaporated. The containers are mounted in the holder, so that neither the latter sample containers nor their contents can receive radiant heat directly from the heat source during centrifuging of the samples in the sample holder,

Art Unit: 1743

but only from the holder. (Refer to Figure 8, Col. 6, Lines 21-30) With respect to the reception of heat recited in claim 1 and shown in applicant's figure 5, the heat is directed to the underside of the main aluminum block, the heat is being transferred through the intermediate block (40). Kimura teaches a similar sample holder where the heat is directed to the underside of the main aluminum block (56, 58, and 62). The heat is supplied to the sample holders in turn heating the samples. The sample holder shields the samples from direct heat energy. Heat is transferred through a highly thermal conductive material such as aluminum to indirectly heat the samples. Kimura also teaches three sample holders that may be held at constant temperature. The temperatures of the aluminum blocks may be held at the same temperature. (Col. 5, Lines 21-24) Temperature control may be made through a holder. (Col. 14, Line 24) With respect to claim 4, as the structure of the sample holder of Kimura is identical to that claimed by applicant, it would be inherent that such a cross-section is selected so that, in use, no appreciable temperature gradients exist during evaporation. With regards to Claim 16, Kimura discloses a pressurized air conduit; the air is directed from the source into the storage vessel through valves (76,78,74 and 72). These valves hold the storage vessel in communication with the sample tube. (Col. 6, Lines 35-40) Thus, the sample holder is capable of operating in a vacuum chamber. Examiner notes that claim 1 recites, "a sample holder for centrifuging" and "during centrifuging of the samples". This recitation of intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is

capable of performing the intended use, then it meets the claim. Applicant does not claim a centrifuge.

3. **Claims 12-13** are rejected under 35 U.S.C. 102(b) as being anticipated by Brierton (US 5356365).

Brierton teaches a centrifugal evaporator to assist in evaporating solvent therefrom and leave dry residue sample material, previously dissolved in the solvent, comprising the steps of mounting the samples in good thermal contact with a mass of high thermal conductivity material forming a sample holder (centrifuge bowl (90) and base (94)), centrifuging the samples in the sample holder (centrifuge bowl (90) and base (94)) and at the same time supplying energy to heat the sample holder (centrifuge bowl (90) and base (94)) and in turn the samples, wherein the sample holder (centrifuge bowl (90) and base (94)) shields the samples from direct heat energy, whereby the samples receive no heat directly, but only via the mass of high thermal conductivity material forming the sample holder (centrifuge bowl (90) and base (94)). Brierton teaches, "a heat exchanger is attached to the base and thus rotates with the centrifuge bowl. Preferably, the heat exchanger has a profile which substantially matches that of the base portion, and is thus effectively coextensive therewith to enhance the heat transfer from the base to the heat exchanger. Consequently, a heat transfer medium having a desirable convective heat transfer coefficient may be circulated through the heat exchanger to change the temperature of the base. As can be appreciated, a heat exchanger of this type may be readily adapted for use with a variety of configurations of centrifuges and only requires limited structural modification of the centrifuge to

Art Unit: 1743

accommodate the attachment of the heat exchanger to the centrifuge bowl.” (See Col. 2, Lines 59-68 –Col. 3, Lines 1-4) Bierton further teaches, “the temperature control assembly 170 interacts with the base 94 of the centrifuge bowl 90 to substantially maintain and/or control the temperature across the base 94, and thus substantially the entire spectrum of materials within the centrifuge bowl 90 interacting therewith. In one embodiment, the temperature control assembly 170 includes a heat exchange plate 174, a portion of the shaft assembly 194, and a temperature-controlling recirculator assembly 190 as illustrated in FIGS. 3-5. Generally, the heat exchange plate 174 is attached to the base 94 and thus rotates with the centrifuge bowl 90 during centrifuging. The heat exchange plate 174 receives an appropriate heat transfer medium from the temperature-controlling recirculator assembly 190 via a portion of the shaft assembly 194 to remove or add heat from the base 94 and thus the spectrum of materials interacting, directly or indirectly, therewith. The heat transfer medium within the heat exchange plate 174 may then be recirculated via the shaft assembly 194 to the temperature-controlling recirculator assembly 190 for cooling or heating and subsequent use in the heat exchange plate 174. As can be appreciated, the temperature of any fluid from the volume variation assembly in the lower chamber of the bowl 90 will also have a tendency to move towards the ambient temperature during centrifuging, if different initially. Therefore, it may be desirable to incorporate an appropriate cooler/heater 210 to control the temperature of this fluid.” (See Col. 7, Lines 32-59) Bierton further teaches, “Although a variety of factors may of course impact the

Art Unit: 1743

materials selected for the base 94 and the heat exchange plate 174, one such factor is **thermal conductivity.**" (See Col. 8, Lines 4-7)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Kimura in view of Sheeran (US 4832678).

Refer above for the teachings of Kimura.

Kimura fails to teach sample containers are mounted in one or more intermediate holders which in turn mounted in recesses in the sample holder.

Sheeran discloses a sample container (40) is mounted in one or more intermediate holder/tube adapter (14), which in turn is mounted in recesses in the sample holder. (See Figure 1)

It would have been obvious to one of the ordinary skill in the art to provide an adapter within the sample holder of Kimura in order to securely and firmly hold the sample containers of various sizes within the sample holder.

Allowable Subject Matter

Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With regards to Claim 7, prior art fails to teach or fairly suggest the sample containers are held at a fixed angle to the vertical between 35 and 65.

With regards to Claim 8, prior art fails to teach or fairly suggest a spacing member between adjoining holders (stacked) in good thermal contact, so that the temperature of one holder will tend to be the same as the temperature of the other.

Response to Arguments

Applicant's arguments filed on January 30, 2005 have been fully considered but they are not persuasive.

Applicants argue that Kimura does not teach that the constant temperature vessels are sample holders for centrifuging as recited in Claim 1. It is reminded to applicant that Kimura teaches a centrifuging device as a whole that includes the sample carrier, vessels and sample containers. Therefore, the vessels of Kimura are sample holders for centrifuging.

Applicant also argue that Berton does not teach a method that includes the step of mounting samples in a good thermal conduct with a mass of high thermal conductivity material forming a sample holder. It is inherent that the samples are mounted in the sample holder (centrifuge bowl (90) and base (94)) in order to operate/enable the device and separate the material. As for, "in a good thermal conduct with a mass of high thermal conductivity material", the sample holder of Berton teaches selecting a material with thermal conductivity. It would be inherent due to heating/cooling of the sample holder by convection of Berton, the samples are mounted in a good thermal conduct with a mass of high thermal conductivity material forming a sample holder.

Applicant further argue that Berton does not teach a method in which sample container are located in a sample holder whereby temper gradients within the assembly are minimized and the existence of liquid in samples which are still evaporating prevents dried sample material from reaching a temperature at which damage can

occur to the material. It is noted to applicant that examiner does not use Berton to teach this art but uses Kimura. Please see rejection above.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jyoti Nagpaul whose telephone number is 571-272-1273. The examiner can normally be reached on Monday thru Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1743

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JN


Jill Warden
Supervisory Patent Examiner
Technology Center 1700